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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/331,759	06/25/99	HIGASHIYAMA	K 001560-363

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EXAMINER

MARX, I

ART UNIT

PAPER NUMBER

1651

DATE MAILED: 08/15/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.
09/331,759

Applicant(s)
Higashiyama et al.

Examiner
Irene Marx

Group Art Unit
1651



- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-27 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-27 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

The application should be reviewed for errors and conformity with domestic practice.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is vague indefinite and confusing in the recitation "mycelial morphology... is controlled by adjusting", since it is unclear what aspect of the morphology is to be controlled. Moreover, the claim is confusing in that it is uncertain which products are enhanced in productivity. It appears unlikely that productivity of all products of all filamentous fungi is simultaneously enhanced. Regarding claim 6-7, it is not apparent that all filamentous fungi produce unsaturated fatty acids in recoverable amounts.

Claim 7 is confusing in the recitation of "Mead acid". It is unclear what is to be encompassed by this material.

Claim 18 is vague, indefinite and confusing in that it is unclear are intended to be in the alternative or whether all of these processes are intended all at once. The use of multiple "and" and "or" renders the claim ambiguous and open to interpretation.

Claims 21-27 appear incomplete in the recitation of a culture medium containing only ions as components. Generally culture media provide at least a carbon and nitrogen source.

Claim 26 and 27 provide for the use of ions, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 26 and 27 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for

example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 6 and 7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Manoh *et al.*. See, e.g., Table E.

Claims 1 and 4-7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Suzuki *et al.*. See, e.g., Example 1.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yamaguchi *et al.*. See, e.g., Example 1.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki *et al.* taken with Manoh *et al.* and Yamaguchi *et al.* (US 5,015,579)

Suzuki *et al.* teach the use of phosphate, potassium, sodium, magnesium and calcium ions in a culture medium for the cultivation of the filamentous fungus *Mortierella* for the

production of unsaturated fatty acids (See, e.g., Example 1). In addition Manoh *et al.* teach the use of these ions in a culture medium for the cultivation of the filamentous fungus *Cunninghamella* for the production of unsaturated fatty acids (See, e.g., Table E.) and Yamaguchi *et al.* teach the use of these ions in a culture medium for the cultivation of filamentous fungi (See, e.g., Example 1)

The references appear to differ from the claimed invention in the specific amounts of the ions used in the culture medium. However, even if the amounts are not identical, the combined teachings of the references, nevertheless, would have rendered the use of media having a specific range of ions obvious to one of ordinary skill in the art, since various amounts are used in the references and the adjustment of culture media ingredients for optimization purposes is the essence and basis of the fermentation arts.

With respect to the addition of a nitrogen source derived from soy beans, it is noted that Yamaguchi *et al.* teach the use of defatted soybean meal as nitrogen source for the cultivation of filamentous fungi containing in addition phosphate, potassium, sodium, magnesium and calcium ions (See, e.g., Example 1). Even though the particulars of the process of making the soybean product are not disclosed in the reference, one of ordinary skill in the art would reasonably have expected the production method to include one or more of the alternatives recited in claim 18.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of culturing and culture medium compositions of Suzuki *et al.*, if necessary, according to the teachings of Manoh *et al.* and Yamaguchi *et al.* for the production of unsaturated fatty acids with strains of *Mortierella*, for the expected benefit of increasing the yields of unsaturated fatty acids, an important nutritional ingredient of human diet.

Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (703) 308-2922.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (703) 308-4743. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196 .



Irene Marx
Primary Examiner
Art Unit 1651